Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Emergency Communications by Amateur Radio and Impediments to Amateur Radio Communications	)	**FCC Docket No. _**GN-12-91
By W. Lee McVey, P.E. W6EM	)	
To: The Commission	)	

COMMENTS

Introduction

The Commission seeks comments from the Amateur Radio community on two areas of interest noted in the instant Docket. My comments are focused upon examples drawn largely from observations surrounding Hurricane Katrina and from residing in West Central Florida during a time when several Hurricanes impacted the state. I will limit my

emergency comments to the problem of interoperability between public safety personnel and amateur radio operators. With respect to impediments to amateur radio, I will discuss the affects of antenna restrictions on the amateur service from my own experience with private land use contract restrictions.

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I. The Interoperability Problem During Emergencies

1. Augmented or replacement telecommunications systems are frequently needed following disasters affecting infrastructure, but the immediacy of the need or scope of the problem often requires using any means immediately available. Perhaps the best example to draw from is one from Hurricane Katrina where a military helicopter had to resort to dropping a message in a bottle to a responder on the ground as a means of communications.[1] The amateur radio motto of "when all else fails" applied here, but then again, amateur operators can't be everywhere instantly with radios, when such a bridge is needed. If there had been an agreed upon, available means to supplement normal communications at the time, amateur or otherwise, together with sufficient radio equipment, perhaps reliance on a medieval means of communication would not have been necessary.

2. Amateur radio operators can and do assist, but most often limited somewhat by the prevailing practice in affected areas of setting up equipment within emergency operations command centers (EOCs). And, to then begin the cumbersomely slow process

[1] Appendix to FCC 06-83A at P. 26.

of first responders having to communicate back to the EOC, and then an EOC person handing off the request to an amateur operator in the EOC, who in turn relays it to amateurs assisting in the field. Crude interoperability, at best. A better method is needed. Direct responder to amateur-in-the-field communications.

3. There is now widespread use of digital voice modes by public safety agencies, and many have standardized on a common format, known as APCO-25 (P25), to help assure interoperability among trunked radios of different manufacture on the same band.[2] Lured, perhaps as well, by the thought that such a mode will make communications more secure and less likely to be overheard by the public.[3] While this may be true, the military, the Coast Guard and non-public safety users such as amateur radio operators do not widely use digital voice protocols, and are not likely to convert to digital mode P25 just to be able to monitor public safety users should the need arise. Especially with the 700 and 800MHz public safety bands so far-removed from any amateur radio allocations. Irrespective of the proximity of frequency bands, interoperability will remain impeded and perhaps worsen as more public safety users migrate away from analog to digital emission modes and to trunked radio systems on 700 or 800MHz.

[2] Motorola and M/A Comm, for example, use different proprietary digital protocols, thus making interoperability impossible.
[3] In order to intercept digital communications, receivers must be capable of decoding the specific protocol used.

4. In-place infrastructure is often lost from effects of the event. Not only in Katrina's aftermath, but also following Hurricane Charlie in Port Charlotte, FL and after the World Trade Center attacks in New York City.[4] Amateur radio operators were able to provide communications with military and Coast Guard responders in the New Orleans area following Katrina in-part because of the frequency agility and emission compatibility of their VHF radio equipment that can be modified for out of band operation.

5. The Internet is a commonly used means of communications. However, Internet access is dependent upon wireline and cellular telephone facilities. Both types of infrastructure were unavailable following Hurricane Katrina for many days. Overhead and underground telecommunications, wire centers and power pathways were heavily damaged following Katrina, disabling traditional means to reach the Internet. Amateur radio can provide email and file transfer Internet access via HF radio through a distant out-of-area amateur station with Internet access. Pactor, Olivia and Clover are digital modes frequently used with HF single-sideband transceivers and modems for this purpose.

[4] Port Charlotte Police were unable to use their damaged UHF mobile relay system in the aftermath of Hurricane Charlie. An officer who was an amateur licensee interoperated using a distant amateur radio repeater to seek assistance using his patrol unit radio on the adjacent 70cm amateur band. Following the World Trade Center collapse, interoperabilty was difficult due to disparate trunked system protocols.

6. Although stationary orbiting satellites are insulated from on-earth events, they too could be disabled by rogue nations intent on disruption of strategic national telecommunications. High frequency (HF) communications capability is a necessary component of our national security telecommunications planning,[5] even if HF is only to be used as a replacement for unavailable satellite pathways.

7. The Shared Resources radio program (SHARES) provides regional and national interoperability.[6] It consists of a network of state and federal government, military, industry and relief-agency participants that can interoperate via numerous HF channels. This service functioned in the aftermath of Hurricane Katrina, and should be an example to be followed in creating an interoperability solution at the local and responder levels. Selection of a band or even just a few channels of high-band VHF allocation as noted above would foster a similar form of tactical interoperability.

8. The Military Auxiliary Radio System (MARS) is an existing service composed mostly of civilian amateur radio operators and a few military stations. This service supplies and trains civilian amateur members to coordinate the SHARES service and conduct training and routine operations. MARS is already a user of the 148-150MHz spectrum in many areas and serves as an example of existing interoperability between the

[5] See 47**CFR**§202, *et.seq*. The White House Office of Science and Technology Policy and the National Security Council have established national defense and disaster telecommunications directives and policies.
[6] See Appendix to 47**CFR**§216, NCS Directive [3-3] The SHARES HF Radio Program.

military and amateur radio operators. Each year, as part of Armed Forces Day, a crossband communications test occurs on many HF frequencies to demonstrate interoperability between the Amateur Radio Service and the military, should a need to interoperate with the military on a regional or national scale ever occur.

9. A frequency band compatible with much existing radio communications infrastructure would be an effective means to achieve local interoperability with many responders, and where not, a sufficient supply of supplemental portable, cross-band, mobile relay units could be supplied for deployment in affected areas. Ideally, high-band VHF spectrum, employing conventional FM voice emission, would be the best choice since it is used by the military, Coast Guard, public safety, the Amateur Radio Service, the Civil Air Patrol, and other federal agencies.[7] To address this need, I have filed a Petition for Rulemaking on several occasions, proposing the creation of a new radio service to fulfill this purpose. A copy of the Petition is included as Appendix A to this filing.

10. The Amateur Radio Service has responded to assist in the aftermath of disaster events in the US and in all large-scale disasters around the world. The successful use of

[7] Ideally, spectrum should be located adjacent to existing allocations so as to permit services to select frequencies that are capable of being used by existing equipment. The 148 to 150MHz band, now exclusively for federal and military users, would meet this need.

amateur radio as a practical interoperability solution depends primarily upon the availability and capabilities of operators and their station equipment.

II. Impediments to the Continued Existence of the Amateur Radio Service

11. Over the last 30 years in the United States, there have been few community subdivisions, if any, that have been created without Conditions, Covenants and Restrictions (CC&Rs). Virtually all CC&Rs contain restraints or outright prohibitions on the installation of any type of outdoor antenna. Even simple, unobtrusive wire antennas are prohibited, for the most part, within developments. With the advent of direct satellite television and two-way, over-the-air Internet, Congress and the Commission saw fit to enact rules to pre-empt CC&Rs to permit use of reasonable outside antennas.[8] In order to help ensure that sufficient amateur radio operators will be available to provide emergency interoperability in the aftermath of future disasters, similar protections, in concept, should be extended to the Amateur Radio Service. Without the pre-emption of CC&Rs for at least simple wire or rod antennas, the Amateur Radio Service, MARS, and SHARES will be increasingly impeded as years go by and eventually will likely be unable to respond as

[8] The OTARD Rule at 47**CFR**§1.4000

well as they now can, due to fewer and fewer amateur radio operators at fixed, residential locations with effective HF antennas. Further, even if HF mobile or portable amateur radio stations are able to operate within an affected disaster area, fixed stations with effective antennas at distant locations would still be necessary for sustainable, reliable telecommunications to and from those amateur stations working disasters.

12. Over the years, I have experienced the impact of CC&Rs on myself and others. Perhaps, if CC&Rs had been around 50 years ago, I might not have become an amateur operator, and my subsequent career as an Electrical Engineer and life might have been profoundly different. I have recounted a particularly adverse experience with CC&Rs while living in Florida and have included it as Appendix B. It, I believe, exemplifies particularly egregious intent on the part of at least one developer. One who claims to have constructed over 8,000 homes in West Central Florida.[9]

III. Summary and Final Comments

13. Unless the greatest single impediment to the future of the Amateur Radio Service, CC&R antenna prohibition, is effectively suppressed, amateur radio may not exist in

[9] Neal Communities, Bradenton and Sarasota, Florida

future years. Or, if it does, it will be relegated to users with vehicular stations and perhaps primarily users of low power walkie-talkies operating through repeaters. Useful for local emergencies, but of little strategic, national or international value. Sure, there are a few of us who are old enough to be retired to the green pastures of rural communities or own very old homes in order to escape unreasonable restrictions. And, we have kept our licenses and remain active. But, when we become "silent keys," will walkie-talkie users in sufficient numbers decide to leave cities in search of acreage away from civilization so they can construct an outside wire or vertical antenna in order to operate on the HF bands? Not likely.

14. Are the promulgated purposes of the amateur service applicable anymore?[10] Is it still in the national interest for our young people to develop knowledge and follow-on career interests in radio and electronics? Is communication with international amateurs still a desirable way to instill international goodwill? It can be said that having to make a compromised antenna out of a flag pole, a gutter down-spout or roof vent extension won't make for much, if any, international goodwill. Nor will an in-attic antenna, when the roof over it is wet or *Boca-Grande*-style sheet metal. A typical attic is home to metal HVAC ducting, foil-backed insulation, vent fans and such. More impediments to effective radiation. And, add to this the *ultimate* impediment: CC&R total bans on <u>any</u>

[10] 47**CFR**§97.1(a)-(e).

radio transmission from one's primary residence designed to decimate any thought of obtaining an amateur radio license in almost anyone.

15. I spent almost 6 years in a residence that, by its carefully worded restrictive language and developer control of its Architectural Review Committee (ARC), prohibited any type of outdoor antenna. Until, at least, the developer turned over the homeowner association to its residents and an ARC was set up. I was unable to operate my radios from inside my home for almost 3 years as a result. I was finally able to point out to my fellow residents on the ARC that allowance of a reasonably unobstrusive wire antenna would be no more aesthetically displeasing than flag poles or lightning rods atop roof ridgelines. More specifics are included in Appendix B.

16. This is undoubtedly the most important inquiry ever made by Congress about the the Amateur Radio Service. Hopefully, via this proceeding, Congress will learn a great deal more about the value and utility of the Amateur Radio Service; and will understand the need for simple, effective, outdoor antennas for practical HF operation. Congress preserved consumer choice in television reception and microwave radio-based Internet access, so it follows that it should now similarly protect basic, effective amateur radio antennas to assure the future availability of amateur radio HF operation.

17. I wish to thank the Commission and the Congress for their concern about the important purposes of the Amateur Service and to determine what stands in the way of it continuing to be able to adequately function in the national interest.

Respectfully Submitted this 24th day of April, 2012.

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Appendices(2)
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